

IN THE SPECIFICATION:

Please replace paragraph 5 with the following amended paragraph.

At least one known method to determine the bonding strength of the bonding of the sprayed coating to the substrate requires destructive sectioning of the coated substrate article and metallurgical inspection of the bondline region. This method is normally used to establish process parameters that achieve a good bonded coating, and then the same process parameters are duplicated in the production coating operations. Because the thermal-spray process is so versatile, it may be difficult to perform destructive testing over the entire range of possible types of coatings and configurations of substrate articles. Moreover, even if a process is deemed through the destructive testing process, relatively minor variations in production parameters may lead to unacceptable bondline structures in the production articles. Another problem with the use of test articles is the test articles may behave differently than the production articles. Additionally, post-coating operations such as heat treating and machining may introduce bondline defects to initially defect-free bondlines.

Please replace paragraph 8 with the following amended paragraph.

Figure 1 is a schematic illustration of an exemplary gas turbine ~~engine;engine~~.

Please replace paragraph 9 with the following amended paragraph.

Figure 2 is a perspective view of a turbine stationary seal used with the gas turbine engine shown in ~~Figure 1~~Figure 1.

Please replace paragraph 18 with the following amended paragraph.

In one embodiment, coating 40 is a thermal barrier coating such as, but not limited to, a Nickel Chromium Aluminum (NiCrAl) coating having a nominal composition range, in weight percent, of from approximately 4.5% to approximately 7.5% percent aluminum, from

approximately 15.5% to approximately 20.5% chromium, approximately 3.0% manganese, approximately 1.0% iron, approximately 0.3% carbon, approximately 2.0% silicon, approximately 3.5% of other elements, and approximately 70.0% nickel. In the exemplary embodiment, coating 40 is between approximately 0.002 inch and approximately 0.150 inch in thickness and may be applied to stationary seal 30 using a quantity of thermal spray techniques such as, but not limited to, high velocity oxyfuel spray (HVOF), air plasma spray (APS), low-pressure-plasma spray (LPPS), electric wire arc spray, and combustion wire or powder spray. After coating 40 is applied to a surface 64 of article 28, a heat treatment operation is performed to facilitate diffusing coating 40 into article 28. Coating 40 is then non-destructively tested to determine if any bondline faults exist between coating 40 and surface 64 of article 28. More specifically, a wide variety of factors, such as the shape of article 28, i.e. stationary seal 30, the base material of article 28, the coating material, i.e. coating 40, and variations in operating parameters may result in near-bondline flaws between article 28 and coating 40. Such flaws may cause thermal-spray coating 40 to perform in an unsatisfactory manner. Therefore article 28 is tested to determine whether such flaws are present in article 28 and when coated substrate article 28 is free of such flaws.

Please replace paragraph 19 with the following amended paragraph.

Figure 3 is a system 50 that may be used to non-destructively test a bondline between a metallic substrate, such as stationary seal 30, and a coating applied to the substrate, such as coating 40. Figure 4 is a portion of system 50 shown in Figure 3. In the exemplary embodiment, system 50 is an eddy current inspection system 50 that includes a data acquisition/control system 52, and an eddy current probe 54 having a cam 56. In the exemplary embodiment, eddy current probe 54 is a cam follower probe configured to operate at approximately 500 kiloHertz. Eddy current probe 54 is electrically coupled to data ~~acquisition/control system 50~~ acquisition/control system 52 such that control/data information can be transmitted to/from eddy current probe 54 and data acquisition/control system 52. System 50 also includes a turntable 58 configured to rotate around an axis 60, and a

mechanical member 62 such as, but not limited to, a robotic arm slidably coupled to article 28 such as, a portion of turbine stationary seal 30 positioned on turntable 58.

Please replace paragraph 23 with the following amended paragraph.

Figure 5 is a method 100 for fabricating and testing an article having a thermal-spray coating thereon. Method 100 includes providing 102 a substrate article 28 having a surface 64, and thermally spraying 104 a coating material 40 onto surface 64 of substrate article 28, wherein a surface of contact between coating material 40 and substrate article 28 is defined as a bondline. Coated substrate article 28 is then positioned on turntable 58. Turntable 58 is then energized such that coated substrate article 28 is rotated around axis 60 of turntable 58. Method 100 further includes nondestructively testing 106 coated substrate article 28, wherein nondestructively testing 106 includes generating 108 an eddy current in coated substrate article 28, measuring 110 the eddy current in coated substrate article 28, and evaluating 112 a near-bondline region of coated substrate article 28 located adjacent to the bondline using the measured eddy current.

Please replace paragraph 24 with the following amended paragraph.

More specifically, pulse generator 74 is used to excite drive coil 70 with an essentially rectangular-shaped short duration pulse of electrical current while sensors 72 and coil 70 are on or proximate surface 64 of coated substrate article 28. As a result, a pulsed eddy current is generated in coated substrate article 28 under test. Sensor or sensors 72 sense the pulsed eddy current as a voltage. For example, the pulsed eddy current may produce a signal ranging from approximately +500mV to approximately -500mV in sensor or sensors 72 for a particular article 28. In the exemplary embodiment, only a signal generated by one sensor 72 is considered for the remainder of this discussion, as a plurality of sensors 72 is not required to practice many configurations of the present invention. Also, sensor 72 may produce either a voltage or a current indicative of the pulsed eddy current. Therefore, "a measured eddy

current," as used herein, includes any measured representation of the eddy current, whether the representation is in the form of a voltage, a current, or a digitized value.